

SUPERFUND RESPONSE ACTION PRIORITY PANEL REVIEW FORM

Date Form Completed: October 12, 2011

General Site Information

Region:	2	City:	Warren County	State:	NJ
CERCLIS EPA ID:	NJD981179047	CERCLIS Site Name:	Pohatcong Valley Groundwater Contamination Superfund Site		
NPL Status: (P/F/D)	Final	Year Listed to NPL:	1989		

Brief Site Description: *(Site Type, Current and Future Land Use, General Site Contaminant and Media Info, Site Area and Location information.)*

The Pohatcong Valley Groundwater Contamination site occupies portions of Washington Borough, Washington Township, Franklin Township, and Greenwich Township in Warren County, New Jersey. The site encompasses three operable units (OUs) and a broad range of demographics including municipal, industrial, commercial, farm, and residential land in Pohatcong Valley. The valley is part of the Delaware River watershed.

The OU1 study area comprises about 8.75 square miles (5,600 acres) of residential, commercial and industrial properties. The OU2 study area covers approximately 6.5 square miles (4,200 acres) of more rural agricultural or vacant land with dispersed residences and housing developments. A third operable unit, OU3, includes the former American National Can (ANC) facility and source areas that contributed to trichloroethene (TCE) contamination of groundwater. The OU1 area also includes the identified historical sources of tetrachloroethene (PCE) groundwater contamination.

The TCE groundwater plume extends approximately 10 miles within the valley, through all three operable unit study areas. The PCE plume is primarily limited to the Washington Borough portion of the OU1 study area. The groundwater is designated by the state as a potable water supply, and private and public wells use the aquifer for this purpose. TCE and PCE have impacted municipal and private water supply wells in Washington Borough causing the state to install water lines to threatened and impacted properties within the OU1 study area. A municipal water supply is not currently available for the OU2 area of the site where potable water is obtained from private wells, some of which have point-of-entry-treatment systems. About 350 to 400 residences and businesses utilize private wells in the OU2 area.

The contamination is area-wide with over 100 potential sources evaluated by EPA. The size of the threatened/impacted area required that the work be undertaken in phases. Studies focused on the more populated areas first. A Record of Decision (ROD) for the OU1 study area was issued in July 2006 (GW pump & treat). The OU2 ROD was issued in September 2010 (alternate water supply with monitored natural attenuation [MNA]).

There are three remedial designs (RDs) currently in progress -- two for OU1, and one for OU2. The two OU1 RDs address TCE and PCE groundwater contamination, respectively. The OU2 RD will address groundwater contamination downgradient of the OU1 study area. The OU3 remedial investigation and feasibility study (RI/FS) is expected to begin by the end of 2011.

This Priority Panel evaluation involves the remedial action to address PCE groundwater contamination emanating from the historical PCE source area known as the defunct former industrial Tung-Sol Tubing manufacturing facility, located in Washington Borough within the OU1 study area. The tubing facility has been determined to be the primary source of PCE contamination.

The action also addresses vapor intrusion problems associated with the contaminated groundwater from the Tung-Sol facility. It should be noted that the former facility buildings were converted into an apartment complex in the 1980s; the complex is currently occupied with tenants. Tung-Sol was reported to have manufactured vacuum tubes for the Navy.

SUPERFUND RESPONSE ACTION PRIORITY PANEL REVIEW FORM

The primary groundwater contaminants include PCE, TCE, cis-1,2-Dichloroethene, 1,1-Dichloroethene, 1,1,1-Trichloroethane, Carbon Tetrachloride, Chloroform, and 1,2-Dichloroethane.

General Project Information

Type of Action:	Remedial Action	Site Charging SSID:	0231
Operable Unit:	01	CERCLIS Action RAT Code:	
Is this the final action for the site that will result in a site construction completion?			<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Will implementation of this action result in the Environmental Indicator for Human Exposure being brought under control?			<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Response Action Summary

Describe briefly site activities conducted in the past or currently underway:

The State of New Jersey closed hundreds of private wells in 1988 – 90 and installed municipal water lines to most of the impacted residents in the OU1 study area. In addition, over 100 point-of-entry-treatment systems (POETS) have been installed on private wells in the OU2 study area.

RI/FS activities started as early as 1990. Two RODS have been signed to date and design activities are underway. Design tasks associated with the subject remedial project include well installation/sampling, pump tests, treatment plant design, vapor intrusion screening, additional source area investigations, and identification of private wells in need of public water supply hook-up or POETS if municipal water unavailable.

More recently, EPA has been conducting vapor intrusion indoor air sampling in the area of the OU1 PCE groundwater contamination. Since 2009, sub-slab and/or indoor air samples have been collected from over 38 locations, including homes, apartment units, and a day-care center situated over the groundwater plume. So far, EPA has installed sub-slab ventilation systems (SVSs), under the removal program, at one of the former Tung-Sol Tubing buildings converted to apartment units where indoor air vapors exceeded acceptable levels. The agency continues to conduct vapor sampling to monitor the migration of vapors into structures throughout the area of the groundwater plume and install SVS mitigation systems in homes that exceed protective levels. In addition, several residences located across the street from the former industrial facility have elevated sub-slab vapor sample detections that exceed EPA's screening criteria.

It should also be noted that a separate soil remediation effort involving PAHs and metals is occurring at the converted apartment complex (the former Tung-Sol facility) under State of New Jersey oversight (primarily a capping remedy).

Specifically identify the discrete activities and site areas to be considered by this panel evaluation:

The specific activity or project to be considered by the panel at the present time involves the implementation of the OU1 ROD remedy for PCE groundwater contamination. The project includes pumping the center or most contaminated portion of the groundwater plume followed by treatment of the extracted water to meet appropriate standards and recharge. The less contaminated or downgradient portion of the plume will be addressed by MNA. Residences and businesses that have not hooked up to the alternate water supply will be connected. In addition, EPA will continue to conduct vapor intrusion sampling and install vapor mitigation systems, where necessary.

Briefly describe additional work remaining at the site for construction completion after completion of discrete activities being ranked:

SUPERFUND RESPONSE ACTION PRIORITY PANEL REVIEW FORM

Remedies need to be implemented for the OU2 and OU3 study areas.

Response Action Cost

Total Cost of Proposed Response Action:

(\$ amount should represent total funding need for new RA funding from national allowance above and beyond those funds anticipated to be utilized through special accounts or State Superfund Contracts.)

\$5 million (likely to be higher upon RD completion)

Source of Proposed Response Action Cost Amount:

(ROD, 30%, 60%, 90% RD, Contract Bid, USACE estimate, etc...)

ROD (GW estimate, plus anticipated VI mitigation costs)

Breakout of Total Action Cost Planned Annual Need by Fiscal Year:

(If the estimated cost of the response action exceeds \$10 million, please provide multiple funding scenarios for fiscal year needs; general planned annual need scenario, maximum funding scenario, and minimum funding scenario.)

N/A

Other information or assumptions associated with cost estimates?

N/A

Readiness Criteria

1. Date State Superfund Contract or State Cooperative Agreement will be signed (Month)?

September 2012

2. If Non-Time Critical, is State cost sharing (provide details)?

N/A

3. If Remedial Action, when will Remedial Design be 95% complete?

September 2012

4. When will Region be able to obligate money to the site?

September 2012

5. Estimate when on-site construction activities will begin:

March 2013

SUPERFUND RESPONSE ACTION PRIORITY PANEL REVIEW FORM

6. Has CERCLIS been updated to consistently reflect project cost/readiness information?

CERCLIS needs to be updated.

Site/Project Name: Pohatcong Valley Groundwater Contamination Superfund Site

Criteria #1 - RISKS TO HUMAN POPULATION EXPOSED (Weight Factor = 5)

Describe the exposure scenario(s) driving the risk and remedy. Include risk and exposure information on current/future use, on-site/off-site, media, exposure route, and receptors:

The primary OU1 site-related risks involve potential exposure to contaminated groundwater, and indoor air exposure due to vapor intrusion at and near the former Tung-Sol Tubing facility. Contaminated groundwater emanating from the facility property travels underneath a densely populated residential area, and directly impacts a public water supply well. In fact, PCE groundwater levels have been detected in the center of the plume up to 30,000 times the drinking water standard. In addition, PCE sub-slab air concentrations have been measured as high as 400 times screening criteria levels for 10 -4 risk (40,000 for 10 -6 risk). EPA recently installed vapor intrusion mitigation systems in one of the converted apartment buildings of the former manufacturing facility due to elevated indoor air quality impacts. Several additional residential structures located across the street from the former facility also have elevated sub-slab vapor screening levels. EPA's vapor intrusion screening effort is ongoing.

Estimate the number of people reasonably anticipated to be exposed in the absence of any future EPA action for each medium for the following time frames:

<u>MEDIUM</u>	<u><2yrs</u>	<u><10yrs</u>	<u>>10yrs</u>
AR	500	750	1000
GW	100	200	300

Discuss the likelihood that the above exposures will occur:

The exposure likelihood is high given that both drinking water supplies and indoor air quality have already been impacted. The groundwater contaminant plume associated with the former Tung-Sol Tubing facility is migrating under a densely developed residential and commercial area of Washington Borough, and continuing to significantly affect a public water supply well that represents the sole source of area drinking water. The state has closed open private wells and installed municipal water service, although the municipal water has also been affected. Not all residents have been connected to the public water supply system. In addition, vapors from the contaminated groundwater are impacting an apartment complex and nearby residential structures. At this point, vapor mitigation systems have been installed in a portion of the apartment complex under the removal program. The ongoing vapor intrusion investigation is expected to identify several additional residences in need of mitigation systems, as well as the remaining buildings in the apartment complex.

Other Risk/Exposure Information?

N/A

SUPERFUND RESPONSE ACTION PRIORITY PANEL REVIEW FORM

Site/Project Name:	Pohatcong Valley Groundwater Contamination Superfund Site	
Criteria #2 – SITE/CONTAMINANT STABILITY (Weight Factor = 5)		
Describe the means/likelihood that contamination could impact other areas/media given current containment:		
The groundwater plume is not controlled. It is continuing to expand in size and migrate beneath occupied residential structures creating additional vapor intrusion problems, as well as continue to migrate to the public water supply well.		
Are the contaminants contained in engineered structure(s) that currently prevents migration of contaminants? Is this structure sound and likely to maintain its integrity?		
The contaminants are not contained in an engineered structure to prevent migration.		
Are the contaminants in a physical form that limits the potential to migrate from the site? Is this physical condition reversible or permanent?		
The volatile organic compound (VOC) groundwater contaminants are in a highly mobile form that can migrate freely.		
Are there institutional physical controls that currently prevent exposure to contamination? How reliable is it estimated to be?		
Most residents have been provided an alternate water supply and vapor mitigation systems have been installed in structures closest to the center of the groundwater plume. No institutional controls are in place.		
Other information on site/contaminant stability?		
The plume has migrated about 10 miles downgradient into the OU2 study area where all potable water is provided through private wells.		
Site/Project Name:	Pohatcong Valley Groundwater Contamination Superfund Site	
Criteria #3 – CONTAMINANT CHARACTERISTICS (Weight Factor = 3)		
<i>(Concentration, toxicity, and volume or area contaminated above health based levels)</i>		
List Principle Contaminants (Please provide average and high concentrations.):		
<i>(Provide upper end concentration (e.g. 95% upper confidence level for the mean, as is used in a risk assessment, or maximum value [assuming it is not a true outlier], along with a measure of how values are distributed {e.g. standard deviation} or a central tendency values [e.g., average].)</i>		
Contaminant	*Media	**Concentrations
PCE	GW	30,000 ppb
TCE	GW	690 ppb
PCE	AR (sub-slab)	16,600 ug/m3
TCE	AR (sub-slab)	747 ug/m3
<i>(*Media: AR – Air, SL – Soil, ST – Sediment, GW – Groundwater, SW – Surface Water)</i>		
<i>(**Concentrations: Provide concentration measure used in the risk assessment and Record of Decision as the basis for the remedy.)</i>		
Describe the characteristics of the contaminant with regards to its inherent toxicity and the significance of the concentrations and amount of the contaminant to site risk. <i>(Please include the cleanup level of the contaminants discussed.)</i>		

SUPERFUND RESPONSE ACTION PRIORITY PANEL REVIEW FORM

Groundwater

Tetrachloroethene – 30,000 ppb vs NJ standard of 1ppb
 Trichloroethene – 690 ppb vs NJ standard of 1ppb
 Cis-1,2-Dichloroethene – 75 ppb vs NJ standard of 1ppb
 Carbon Tetrachloride - 210 ppb vs NJ standard of 1ppb

Air (subslab)

Tetrachloroethene – 16,600 ug/m3 vs screening level of 400 ug/m3
 Trichloroethylene – 747 ug/m3 vs screening level of 100 ug/m3

Describe any additional information on contaminant concentrations which could provide a better context for the distribution, amount, and/or extent of site contamination. *(e.g., frequency of detection/outlier concentrations, exposure point concentrations, maximum or average concentration values, etc.....)*

The frequency of detection is very high for areas coinciding with the higher groundwater contamination levels.

Other information on contaminant characteristics?

N/A

Site/Project Name:

Pohatcong Valley Groundwater Contamination Superfund Site

Criteria #4 – THREAT TO SIGNIFICANT ENVIRONMENT (Weight Factor = 3)

(Endangered species or their critical habitats, sensitive environmental areas.)

Describe any observed or predicted adverse impacts on ecological receptors including their ecological significance, the likelihood of impacts occurring, and the estimated size of impacted area:

Surface waters do exist in the general area. Sediment/water samples from the Pohatcong and Shabbacong Creeks and Edison Quarry did detect VOCs including PCE and TCE, but presently at concentrations below ecological screening levels.

Would natural recovery occur if no action was taken?

☐ Yes ☒ No

If yes, estimate how long this would take.

EPA estimates that it would take more than 50 years for the groundwater to achieve the selected cleanup standards.

Other information on threat to significant environment?

N/A

SUPERFUND RESPONSE ACTION PRIORITY PANEL REVIEW FORM

Site/Project Name:	Pohatcong Valley Groundwater Contamination Superfund Site
Criteria #5 – PROGRAMMATIC CONSIDERATIONS (Weight Factor = 4) <i>(Innovative technologies, state/community acceptance, environmental justice, redevelopment, construction completion, economic redevelopment.)</i>	
Describe the degree to which the community accepts the response action.	
The community at large as well as elected officials are very supportive of the planned response action.	
Describe the degree to which the State accepts the response action.	
The State of New Jersey agrees with the selected response action and formally expressed its concurrence with the selected remedy and has agreed to provide matching funds to implement the response action.	
Describe other programmatic considerations, e.g.; natural resource damage claim pending, Brownfields site, use of innovative technology, construction completion, economic redevelopment, environmental justice, etc...	
<p>EPA continues to spend a significant amount of money each year to monitor groundwater plume movement in the immediate PCE area and throughout the entire site, and to both monitor and remediate for vapor intrusion. A number of residential structures have been identified with sub-slab PCE levels orders of magnitude above screening criteria with current indoor air measurements below removal action criteria. These structures need to be monitored annually to identify impacts to living areas. It would be less expensive to install vapor mitigation systems under the remedial program than continue to incur sampling costs. The State of New Jersey is also spending a significant sum to maintain the well water treatment systems that it installed in the downgradient OU2 study area, although this action more directly addresses TCE groundwater contamination. Intercepting the main PCE source (via the GW pump and treat remedy) before it impacts the public water supply well and continues to migrate down the valley would save considerable resources, and also provide the community with peace of mind that it has a clean and safe source of drinking water and free of concern for vapor intrusion air quality issues.</p>	